

## DETECTING COMPOUNDS WITH LIQUID CRYSTALS

### ABSTRACT OF THE DISCLOSURE

5 A device for detecting a compound in a sample includes a substrate  
and a self-assembled monolayer. The substrate includes a support with a metallized  
top surface, and the self-assembled monolayer includes an alkanethiol attached to  
the metallized top surface of the substrate and having a functional group that  
reversibly or irreversibly interacts with the compound. A liquid crystal is disposed  
on the self-assembled monolayer opposite the side of the self-assembled monolayer  
10 attached to the metallized top surface of the substrate. The liquid crystal includes a  
moiety that interacts with the functional group of the alkanethiol. When the  
compound is present in a sample that that contacts the self-assembled monolayer,  
the orientation of the liquid crystal is altered.